

WHAT IS CLAIMED IS:

1. A photoreceptor comprising:

photoelectric converting means for receiving an optical signal and converting the optical signal into an electric signal;

output means for outputting a digital signal in accordance with the electric signal; and

erroneous operation detection means for monitoring the digital signal thus outputted from the output means, so as to detect erroneous operation,

the output means including output slew rate changing means for changing a slew rate of output of the output means, and

the erroneous operation detection means performing, when the erroneous operation detection means detects the erroneous operation, such control that a transmission speed of the output slew rate changing means is decreased.

2. The photoreceptor as set forth in Claim 1, wherein:

the erroneous operation detection means monitors a pulse width of the digital signal thus outputted, in order

to judge whether or not the erroneous operation occurs.

3. The photoreceptor as set forth in Claim 2, wherein:

the erroneous operation detection means counts a number of edges present in the digital signal per unit time, in order to judge whether or not the erroneous operation occurs.

4. the photoreceptor as set forth in Claim 3, wherein:  
the erroneous operation detection means includes:

edge detection means for detecting an edge;

a capacitor for being charged and being discharged;

switching means being switched ON so as to set the capacitor to a predetermined potential when the edge detection means detects the edge;

charging and discharging means for charging or discharging the capacitor at a predetermined rate;

an integrating circuit for integrating output of the capacitor; and

comparing means for comparing a value of the output of the integrating circuit with a predetermined value.

5. The photoreceptor as set forth in Claim 1, wherein:

the output means includes an inverter including (i) a transistor composed of a P channel MOS FET, and (ii) a transistor composed of an N channel MOS FET, and

the output slew rate changing means includes a variable resistor between the inverter and a constant voltage source, and a variable resistor between the inverter and a grounding wire.

6. The photoreceptor as set forth in Claim 1, wherein:

the output means includes an inverter including (i) a transistor composed of a P channel MOS FET, and (ii) a transistor composed of an N channel MOS FET, and

the output slew rate changing means includes (a) transistors, respectively located between the inverter and a constant voltage source, and between the inverter and a grounding wire, the transistors composed of MOS FETs, and (b) a variable voltage circuit connected to each of gates of the transistors.

7. The photoreceptor as set forth in Claim 1, further

comprising:

preamble detection means for detecting a preamble of a frame constituting the digital signal outputted from the output means,

the erroneous operation detection means performing, only during a period in which the preamble detection means detects the preamble, such control that the slew rate of the output of the output slew rate changing means is decreased.

8. The photoreceptor as set forth in Claim 5 or 6, further comprising:

power source voltage detection means for detecting a voltage value of a power source voltage supplied to the output means,

the power source voltage detection means controlling the slew rate of the output slew rate changing means in accordance with a change in the voltage value of the power source voltage.

9. The photoreceptor as set forth in Claim 1, wherein:

the photoelectric converting means receives a digital audio signal via an optical fiber.

10. A photoreceptor, comprising:

photoelectric converting means for receiving an optical signal and converting the optical signal into an electric signal;

output means for outputting a digital signal in accordance with the electric signal; and

power source voltage detection means for detecting a voltage value of a power source voltage supplied to the output means,

the output means including output slew rate changing means for changing a slew rate of output of the output means, and

the power source voltage detection means controlling the slew rate of the output of the output slew rate changing means in accordance with a change in the power source voltage.

11. A photoreceptor comprising:

a photodiode for receiving an optical signal and converting the optical signal into an electric signal;

an output circuit for outputting a digital signal in accordance with the electric signal; and

an erroneous operation detection circuit for

monitoring the digital signal outputted from the output means, and detecting erroneous operation,

the output circuit including an output slew rate changing element for changing a slew rate of output of the output circuit, and

the erroneous operation detection circuit performing, when the erroneous operation detection circuit detects the erroneous operation, such control that the slew rate of the output of the slew rate changing element is decreased.

12. A photoreceptor comprising:

a photodiode for receiving an optical signal and converting the optical signal into an electric signal;

an output circuit for outputting a digital signal in accordance with the electric signal; and

an erroneous operation detection circuit for (a) monitoring the digital signal outputted from the output circuit, so as to detect erroneous operation, and (b) performing, when the erroneous operation detection circuit detects the erroneous operation, such control that a transmission speed of the digital signal of the output means is decreased.

13. The photoreceptor as set forth in Claim 11,

wherein:

the erroneous operation detection circuit includes:

an edge detection circuit for detecting an edge included in the digital signal outputted from the output circuit;

an edge counting circuit for counting a number of edges the edge detection circuit detects per unit time;

an edge number comparing circuit for comparing, with a predetermined number, the number of the edges the edge count circuit counted, and for judging that the erroneous operation occurs, when the number of the edges thus counted is equal or greater than the predetermined number.